Site Specific Odour Management Plan – Castell Malgwyn Farm (3)

STEPSIDE AGRI CONTRACTORS
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Applicant: Mr Daniel James and Mrs Carys James (Stepside Agricultural Contractors)
Permit: SR2010 No4: mobile plant for land-spreading
Permit number: EPR/AB3891CX

Farm address:
Castell Malgwyn Farm, Llechryd, Cardigan, Pembrokeshire, SA43 2QB

Wastes to be applied:

Waste Code	Waste Description	Physical Form	Waste Producer
02 05 02	Waste from the dairy products industry – sludges from on-site effluent treatment	Liquid sludge	Volac/Sensient, Felinfach: EPR/BP3135EB effluent treatment plant (Arla Food Ingredients, Felinfach)
19 09 02	Sludge from water clarification	Liquid sludge	Dwr Cymru Welsh Water Strata Florida WTW
19 09 02	Sludge from water clarification	Liquid sludge	Dwr Cymru Welsh Water Bontgoch WTW
19 09 02	Sludge from water clarification	Liquid sludge	Dwr Cymru Welsh Water Bryngwyn WTW
19 09 02	Sludge from water clarification	Liquid sludge	Dwr Cymru Welsh Water Capel Dewi WTW
19 09 02	Sludge from water clarification	Liquid sludge	Dwr Cymru Welsh Water Cefn Dryscoed WTW
19 09 02	Sludge from water clarification	Liquid sludge	Dwr Cymru Welsh Water Cray WTW
19 09 02	Sludge from water clarification	Liquid sludge	Dwr Cymru Welsh Water Hirwaun WTW
19 09 02	Sludge from water clarification	Liquid sludge	Dwr Cymru Welsh Water Llechryd WTW

Aim:

To identity potential sensitive receptors to odour near the spreading areas, sources of potential odour generation, factors affecting odour, measures to reduce odour generation, odour monitoring & actions should any odour complaints be received.

Operations will be overseen by the technically competent manager / nominated competent person and all personnel will receive training relevant to their role prior to commencing operations.

Operation description:

The liquid sludge is delivered by HGV road tankers which then discharge into a concrete above ground slurry storage tank, nurse tank, or into a nurse tank with the liquid sludge then pumped via lay flat hose to the slurry bag for temporary storage. The liquid sludge is spread from the concrete above ground slurry storage tank, a nurse tank or the slurry bag onto the deployed fields at the required timings as stated in the deployment agricultural benefit statement. This is done by either umbilical method with the liquid delivered to tractor in deployed fields pumped through hose and spread by dribble bar applicator mounted onto the back of the tractor, or a tractor and vacuum tanker with dribble bar applicator. The dribble bar applicator places the liquid in bands onto the surface of the ground. This spread method is effective in limiting odour generation & nutrient losses associated with higher trajectory spread methods such as splash plate. Spreading is undertaken with the use of flow meters to ensure correct rates are applied.

Odour potential of waste being applied:

The Volac/Sensient (Arla Food Ingredients) liquid sludge has moderately offensive odour and the potential to cause odour generation. The Dwr Cymru Welsh Water liquid water clarification sludges are considered to have no noticeable odour.

As such, the following odour management plan is focused around the Volac/Sensient (Arla Food Ingredients) liquid sludge with moderately offensive odour and the potential to cause odour generation.

Potential sensitive receptors to odour near the spreading areas:

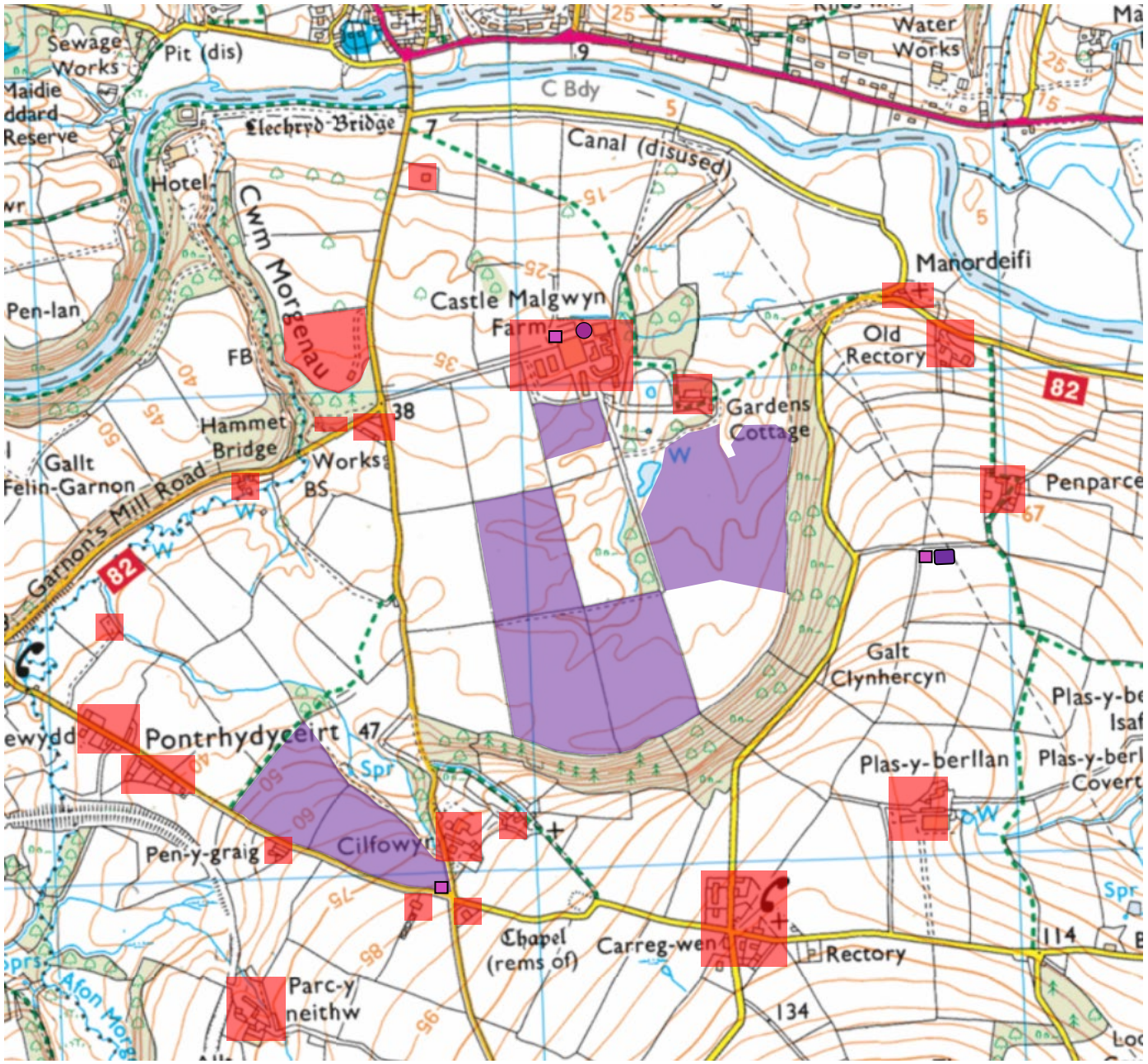
Deliveries to site are made in sealed articulated tankers so there is very little potential for any off site odour during delivery until the wastes reach the deployment area to be spread or are placed into temporary storage awaiting spreading. Temporary storage is in sealed, vented nurse tanks or slurry bag, or in a concrete above ground slurry store at Castell Malgwyn farmyard. There are public footpaths through fields CASTELL MALGWYN 19, 23 & 25 and there are some footpaths within 500m of the spreading areas. There are a number of dwellings within 500m of the spreading areas, a place of worship, places of work & a cricket pitch. The locations of these potential sensitive receptors have been identified on the below maps.

Map Key

	Location of Fields
	Above Ground Slurry Store
	Nurse Tank
	Slurry Bag
	Potential Sensitive Receptors to Odour Within 500 Metres of Fields – Dwellings, Places of Work, Place of Worship, Cricket Pitch
	Public Footpaths

Name: D. Morris
Map Grid Ref: SN 22156 42530
Farm ID: Castell Malgwyn Farm
Farm Post Code: SA43 2QB

Castell Malgwyn Farm – Potential Sensitive Receptors – Odour – Map

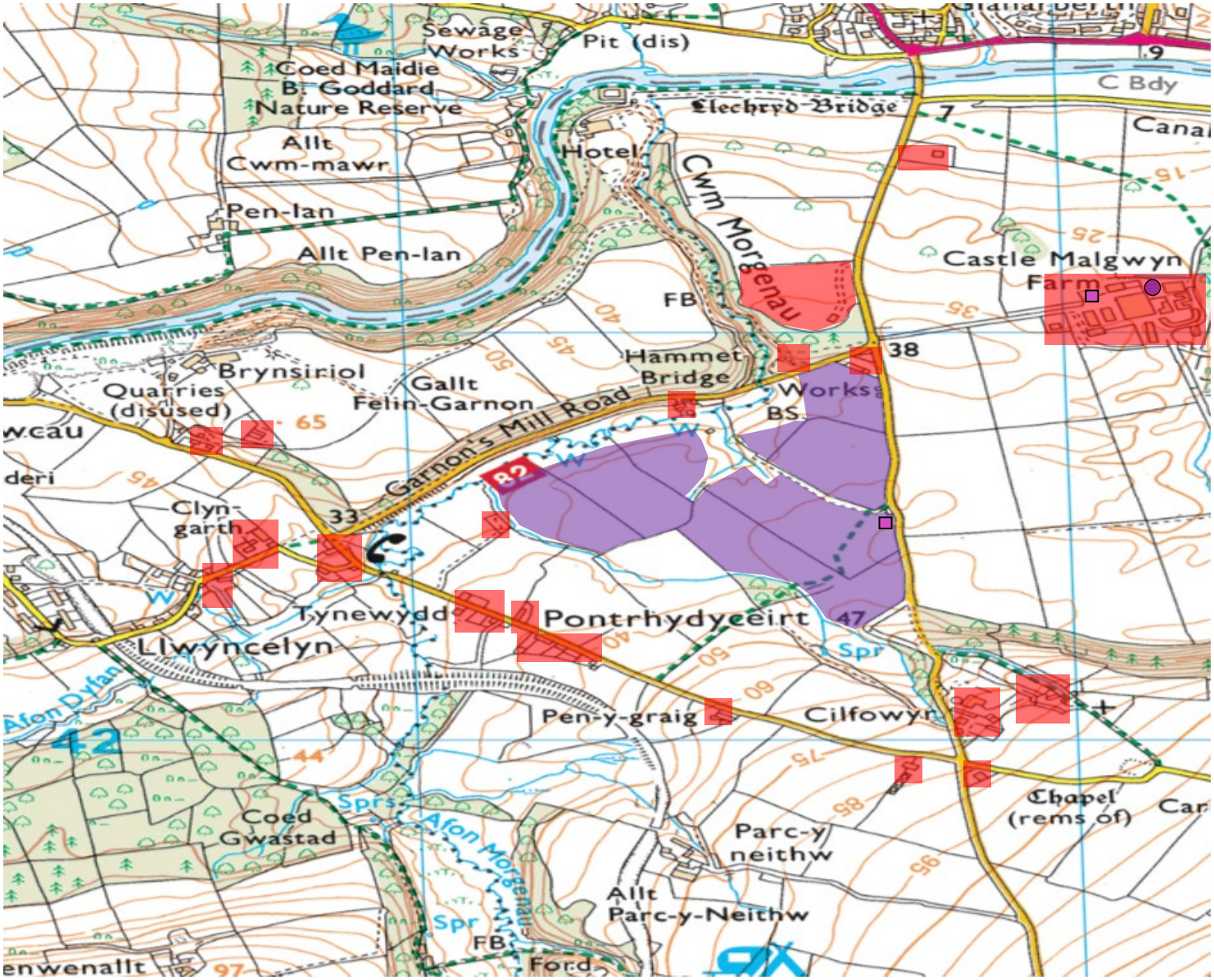


Map Key

	Location of Fields
	Above Ground Slurry Store
	Nurse Tank
	Potential Sensitive Receptors to Odour Within 500 Metres of Fields – Dwellings, Places of Work, Place of Worship, Cricket Pitch
	Public Footpaths

Name: D. Morris
Map Grid Ref: SN 21494 42568
Farm ID: Castell Malgwyn Farm
Farm Post Code: SA43 2QB

Castell Malgwyn Farm – Potential Sensitive Receptors – Odour – Map



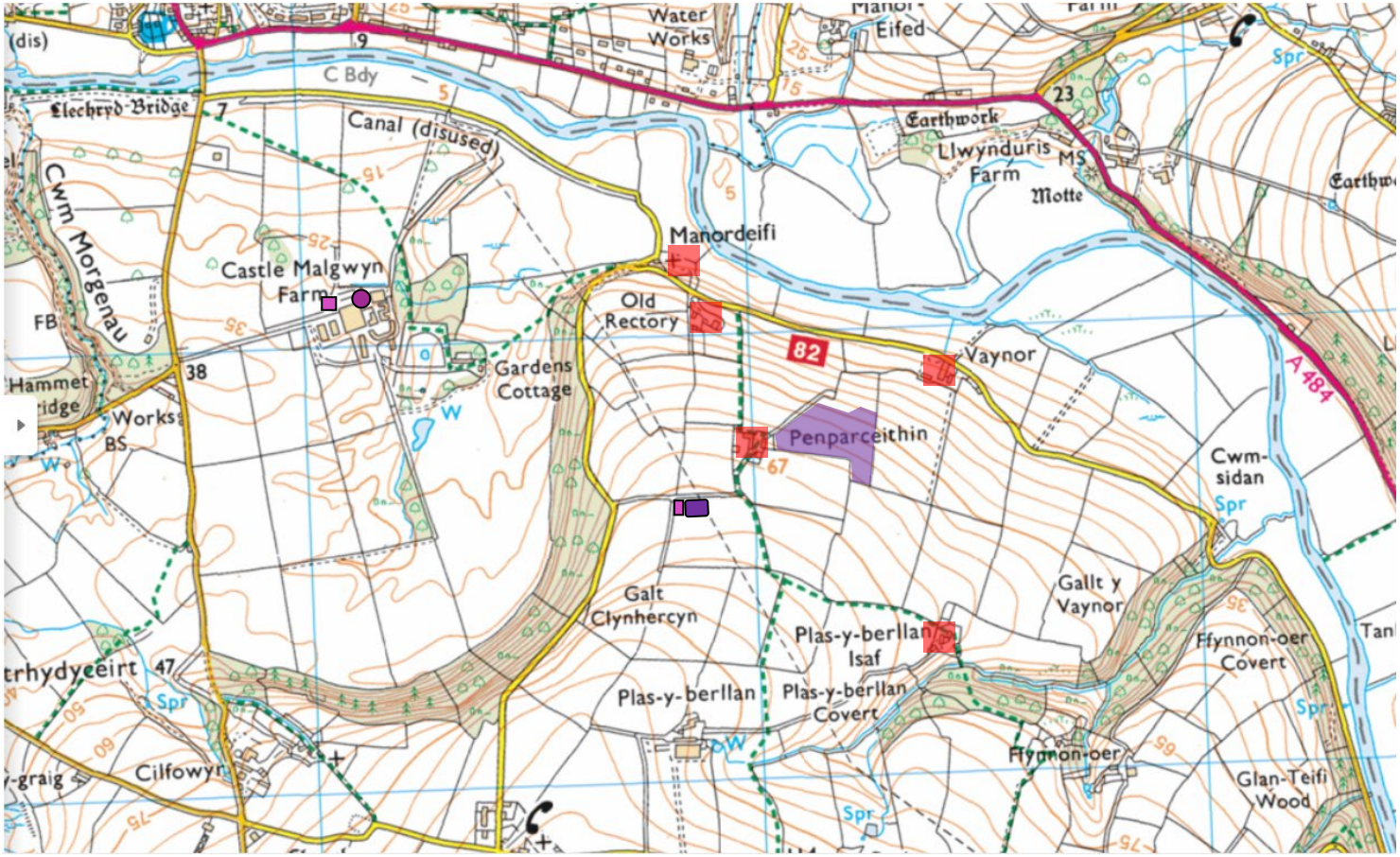
Map Key

	Location of Fields
	Potential Sensitive Receptors to Odour Within 500 Metres of Fields – Dwellings, Places of Work, B&B
	Public Footpaths
	Nurse Tank
	Above Ground Slurry Store
	Slurry Bag

Name: D. Morris
Map Grid Ref: SN 22825 42500
Farm ID: Castell Malgwyn Farm
Farm Post Code: SA43 2QB

Castell Malgwyn Farm – Potential Sensitive Receptors – Odour – Map

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Sources of potential odour generation & control measures:

Delivery

Any odour issues generated by the delivery operation will be of a transient nature as the vehicles will be passing sensitive receptors. Deliveries to site are made in sealed articulated road tankers which is very effective to control any odour. As a result there is very little potential for any off site odour during delivery until the wastes reach the deployment area to be spread or are placed into temporary storage awaiting spreading.

Unloading / Storage / Loading

There is potential for odours to be generated during the transfer of liquid sludge from the HGV road tankers into a nurse tank, concrete above ground slurry store or slurry bag for temporary storage. These odours are generally short lived as once the actual operation involving the transfer of the materials has been completed it is unusual for the temporary storage to generate odours.

The nurse tanks are sealed, can be vented and the liquid sludge is usually in the tanks only for a very short period before being spread or pumped via hose to the slurry bag for temporary storage. The slurry bag is sealed and has degasser valves that are fitted with anti-odour filters. Transfer of liquid sludge is carried out using suction pipe connected between the HGV road tanker and the inlet valve on the nurse tanks ensuring loading remains a sealed transfer reducing potential odour. The above ground slurry store at the farmyard is impermeable with concrete sides and with a concrete base and has an open top. A 30cm minimum freeboard will be maintained at all times. There is potential for some odour during filling and emptying of the above ground slurry store. The slurry store is fitted with fill and empty valves. During decoupling there is the potential for odour release although this is only for a very short time and is likely to dissipate very quickly.

Control of odour from storage can be achieved by ensuring that the wind during filling or emptying is away from the nearest identified sensitive receptors. The rate of odour transmission falls by almost an inverse square with distance i.e. doubling the distance from a receptor decreases the odour impact by almost a factor of four. Storage periods and quantities will also be kept to as short as possible to reduce any potential for odour.

Loading of the temporary stored liquid sludge prior to the material being spread can potentially increase the amount of odour generated however the nurse tanks and slurry bag are sealed to limit odour generation. The above ground slurry store has impermeable concrete sides and base with an open top and is located on the farmyard away from most sensitive receptors. Where spreading is carried out with umbilical method, the liquid is delivered to tractor in deployed fields pumped through hose ensuring a closed transfer system to control any odour from transfer. If spreading is carried out by tractors and vacuum tankers, suction pipe is connected between the vacuum tanker and the outlet valve on the nurse tanks, above ground slurry store or slurry bag ensuring loading remains a sealed transfer reducing potential odour. During decoupling there is the potential for odour release although this is only for a very short time and is likely to dissipate very quickly.

Where possible, and especially in sensitive locations, unloading, temporary storage and spreading operations should be avoided on hot summer days. Odours are more noted on these days as the heat increases the rate of evaporation and volatilisation of odorous compounds increases and therefore the transmission of odoriferous compounds through the air also increases. In addition, warm days encourage people to be more likely to be outside or have windows open and therefore be more likely to be impacted by any odours.

Spreading

This part of the operation has the greatest potential to lead to odour generation and any odour derived complaints. The method of operation, itself dictated by cropping, crop nutrient requirements & soil type and ground conditions can have the most direct effect on control of odour emissions. Spreading method for liquid sludge is by either umbilical method with the liquid delivered to tractor in deployed fields pumped through hose and spread by dribble bar applicator mounted onto the back of the tractor, or a tractor and vacuum tanker with dribble bar applicator. The dribble bar applicator places the liquid in bands onto the surface of the ground which is an effective method in limiting odour generation & nutrient losses associated with higher trajectory spread methods such as splash plate.

Spreading of the liquid sludge should take place when the wind is blowing away from the nearest sensitive receptors and particularly hot days should be avoided whilst spreading. The application of waste is co-ordinated with local weather forecasts and in line with guidance from the Code of Good Agricultural Practice.

High work rates enable the liquid sludge to be applied when the “weather window” is favourable i.e. the wind is blowing away from nearby sensitive receptors. Depending on operational factors, liquid sludge can be spread at rates more than 1000 tonnes per machine per day.

Factors affecting odour:

Several factors can impact the risk of odour. These include the distance of sensitive receptors from the spreading area, store, time of spreading, wind direction, topography, temperature and weather conditions, duration of operation, size of area spread & quantity spread.

The distance of the sensitive receptors from the area being spread has one of the greatest potentials for the risk of odour with odour risk reduced the further the sensitive receptors are from the area being spread. Ensuring spreading is only undertaken near any sensitive receptors when conditions are suitable, and when the wind direction is away from the sensitive receptors will reduce odour risk.

Daily and weekly weather forecasts will be used to help reduce the impact of odours to sensitive receptors and ensure spreading is undertaken under suitable conditions. Forecasts are checked prior to spreading commencing and should the competent spreading team or NCP/TCM note the wind direction alter during spreading and pose greater risk of odour to nearby sensitive receptors spreading may have to stop until conditions and wind direction alter if odour is offensive.

The size of the surface area spread can lead to greater risk of odour due to larger surface area for potentially odour emitting waste. Odour emissions are reduced by controlling the area of material exposed to the atmosphere during spreading through spread method used – placement in bands on the surface of the ground by dribble bar applicator. The duration of the operation will be reduced as much as possible through high work rates & the low trajectory spread method implemented will control and reduce odour emissions compared with other methods. Spreading on weekends and bank holidays will be avoided where possible and avoiding periods of warmer weather as there is likely to be greater risk with more people at home or outdoors.

Odour Monitoring:

Stepside Agricultural Contractors will also carry out monitoring of odours in the area around the site to help detect any off-site odours and identify the causes and any suitable action that needs to be taken. This monitoring will be based on the 'sniff test' at various locations around the site following format as in the Stepside Agricultural Contractors land- spreading environmental management system. Odour monitoring will be carried out by a person or persons who has not been working on site within the preceding 2-hour period to avoid undue influence from odour 'habituation'.

There will be three possible evaluations:

1. No odour perceptible. No action required.

2. Slight odour perceptible. Check the area to determine the potential source. This is followed by a second odour estimation and a log of the odour incident and if any remedial action is required.

3. Perceptible odour. Immediate notification to TCM followed by site & boundary checks to determine whether the odour is from spreading area or an external source. An odour report form will be completed and appropriate remedial action will be undertaken and reported.

A full upwind and downwind assessment will be carried out as soon as practicable at any time when local residents, other receptors or NRW telephone or make contact about off-site odours. An odour complaint form is also completed.

Reporting:

Inspections conducted at the site include monitoring the effectiveness of odour control measures. The findings of each inspection are recorded in document Odour Report Form and are then reviewed by the Stepside TCM / management team. The TCM / management team report any odour issues to the company directors and can implement changes quickly. Checks are made as per the permit requirements and recorded. Based upon the findings, odour control methods are modified or updated.

Staff training:

As part of maintaining best management practices for controlling and preventing odour emissions,
relevant staff will be trained to identify odour concerns as part of inspections. The training will cover the control techniques and operating procedures in place for managing odour emissions, how to maintain them, how to conduct an odour observation check and complete the associated paperwork, what to do in the case of an unexpected odour release, and who to notify if there are any concerns or problems.

Refresher training will be provided as necessary and will be based on changes to the odour emission control techniques.

Implementation schedule:

Both the initial implementation date and the schedule for continued use at the operational site are identified. Daily inspections at the operating site are used to monitor the effectiveness of odour management practices and identify further requirements. Use will ensure odour does not cause pollution/nuisance/harm to human health or the environment.

Community involvement:

It is recognised that a positive relationship with local neighbours is an important part of the odour management plan. In order to promote this, contact information may be sent electronically, or handed to, the closest neighbours to the spreading site if any odours at the deployment site are anticipated. Information will also be made available to local parish councils and environmental health officers should it be deemed appropriate. In some instances, neighbours may be invited to a tour of the site so that they understand the process and they will be positively encouraged to actively provide feedback on any odours impact. This will involve these neighbours being asked to make contact directly if they are affected by odours at the time that odours occur so that causes can be investigated and corrective action taken in a timely fashion.

The objectives of this interaction are to use feedback from neighbours to identify when and why odours are detected off-site so that timely remedial and preventative action can be taken to help minimise off-site impact in future. Any calls to, or contact with Stepside Agri about odours will be recorded using the Odour Complaints Record.

The form will also be used to record any odour complaints that come through local council, Natural Resources Wales or other third parties. Prompt follow up investigations and changes to operations can then be carried out.

It is acknowledged that members of the public using public roadways adjacent to the deployed sites may experience transient odours when travelling past. The particular highways are in rural areas for local use and not subject to commuter or any other regular form of congestion causing traffic to slow down or queue, and any odour exposure will normally be transient and very short term.

Further Actions:

Deliveries and spreading will be stopped if the measures in place do not control off-site odours satisfactorily and are causing odour nuisance to sensitive receptors. Stepside Agricultural Contractors will endeavour to update residents or relevant persons at the sensitive receptor location as soon as possible. Spreading operations will not start again until the cause of the odour issue has been mitigated or the weather conditions giving rise to the odour issue have altered. A shallow slot injector which places the liquid under the soil surface may be used as a measure that may further reduce odour if deemed appropriate and cropping allows.

This site-specific odour management plan will be implemented in conjunction with the Stepside Agricultural Contractors land-spreading environmental management system.